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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/781,731	02/20/2004	Takashi Sato	118784	3636
25944 7590 03/26/2007 OLIFF & BERRIDGE, PLC P.O. BOX 19928 ALEXANDRIA, VA 22320			EXAMINER DHARIA, PRABODH M	
			ART UNIT 2629	PAPER NUMBER
SHORTENED STATUTORY PERIOD OF RESPONSE 3 MONTHS		MAIL DATE 03/26/2007	DELIVERY MODE PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

## Office Action Summary

Application No.

10/781,731

Applicant(s)

SATO, TAKASHI

Examiner

Prabodh M. Dharja

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 07 February 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,4-6 and 9-31 is/are pending in the application.
- 4a) Of the above claim(s) 2,3,7,8 and 32-34 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,4-6 and 9-31 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

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1. **Status:** Please all the replies and correspondence should be addressed to examiner's new art unit 2629. Receipt is acknowledged of papers submitted on 02-07-2007 under amendments, which have been placed of record in the file. Claims 1,4-6 and 9-31 are pending in this action. Claims 2,3,7,8 and 32-34 are cancelled.

***Response to Amendment***

2. The amendment filed 02-07-2007 does not introduces any new matter into the disclosure. The added material is supported by the original disclosure as it only corrects the English of claim language and abstract. Please all the replies and correspondence should be addressed to examiner's art unit 2629.
3. The abstract has been amended per objection. Therefore objection to abstract is withdrawn.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
5. Claims 1,4-6,11,12,16-19,23 and 27-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Empedocles et al. (2005/0199731 A1) in view of Gauthier et al. (US 20010003445 A1).

Regarding Claim 1, Empedocles et al. teaches a display device (page 6, paragraph 115, 7, paragraph 120), comprising: at least one substrate provided with a display unit (page 7, paragraph 120) and display-unit-driving wiring lines (page 7, paragraph 120); at least one of the display unit and the display-unit-driving wiring lines including a conductor layer formed on the substrate from a conductive material in a conductor forming process (page 6,7 and 8, paragraphs 115-120, 126, page 11, paragraph 147, page 26, paragraph 279, page 27, paragraph 298 pages 29,30, paragraph 330); and a radio communication device having a communication integrated-circuit unit and an antenna, the communication integrated-circuit unit being mounted on the substrate (page 7, paragraph 120), at least a part of the antenna being formed on the substrate (page 7, paragraph 120) in the same conductor layer, from the same conductive material and in the same conductor forming process as the conductor layer of the at least one of the display unit and the display-unit-driving wiring lines (pages 7,8, paragraph 120, page 8, paragraph 126, , page 11, paragraph 147, page 26, paragraph 279, page 27, paragraph 298 pages 29,30, paragraph 330), the communication integrated-circuit unit and the antenna being electrically connected to each other by the conductor layer of the at least one of the display unit or the conductors that include the display-unit-driving wiring lines (page 6,7,8, paragraphs 115-120,126, page 11, paragraph 147, page 16, paragraph 205, lines 4-6, page 26, paragraph 279, page 27, paragraph 298 pages 29,30, paragraph 330).

Empedocles et al. discloses RFID tag with display (page 7, paragraph 120). However, RFID tag drawing fails to illustrate the display very specifically.

However, Gauthier et al. discloses RFID tag drawing fails to illustrate the display very specifically (see figure 1, page 1, paragraph 7, page 2, paragraph 20, Lines 15-25).

Thus it is obvious to one in the ordinary skill in the art at the time of invention was made to incorporate teaching of Gauthier et al. in teaching of Empedocles et al. to be able to have display unit smart card with built in antennas and interconnect wiring power and ground leads on one of flexible plastic substrate with very low power electrical energy sources.

Regarding Claim 4, Empedocles et al. teaches the radio communication device having a function of storing information concerning the corresponding display device (page 27, paragraph 298-304).

Regarding Claim 5, Empedocles et al. teaches the radio communication device having at least one of a function of writing information in a radio communication device other than the corresponding display device and a function of reading information from the radio (page 1, paragraph 10) communication device other than the corresponding display device (page 27, paragraphs 298-303, page 1, paragraph 10, page 26,27 paragraph 289).

Regarding Claim 6, Empedocles et al. teaches the radio communication device having a function of storing at least one of information written in a radio communication device other than the corresponding display device and information of the radio communication device other than the corresponding display device (page 27, paragraphs 298-303).

Regarding Claim 11, Empedocles et al. teaches the communication integrated-circuit unit includes of a plurality of semiconductor elements formed on the substrate (page 2, paragraphs

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19-22).

Regarding Claim 12, Empedocles et al. teaches the plurality of semiconductor elements that include the communication integrated circuit has the same structure as another semiconductor element formed on the substrate (page 2, paragraphs 19-22, page 6,7, paragraphs 115-120, page 8, paragraph 126, page 8, paragraph 126, page 11, paragraph 147, page 26, paragraph 279, page 27, paragraph 298 pages 29,30, paragraph 330).

Regarding Claim 16, Empedocles et al. teaches a display device (page 6, paragraph 115), comprising: at least one substrate provided with a display unit (page 7, paragraph 120) and display-unit-driving wiring lines (page 7, paragraph 120); and a radio communication device having a communication integrated-circuit unit and an antenna, at least a part of the antenna formed on the substrate (page 7, paragraph 120) and formed of a conductor formed in the same layer as a conductor that includes the display unit or conductors that include the display-unit-driving wiring lines (page 7, paragraph 120, page 8, paragraph 126, , page 8, paragraph 126, page 11, paragraph 147, page 26, paragraph 279, page 27, paragraph 298 pages 29,30, paragraph 330).

Regarding Claim 17, Empedocles et al. teaches a display device (page 6, paragraph 115), comprising: at least one substrate provided with a display unit (page 7, paragraph 120) and display-unit-driving wiring lines (page 7, paragraph 120).

Regarding Claim 18, Empedocles et al. teaches a charging unit electrically connected to the antenna of the radio communication device through a rectifying unit to control the flow of the current in one direction (page 35, paragraph 388-392, rectifiers are switches and Empedocles teaches the switches/relays that gate current flow) the antenna is used as an antenna to charge power into the charging unit from the outside using electromagnetic induction (page 2,3, paragraphs 22-28, Empedocles teaches antenna has inductor and capacitor as a tuner. It is well known in the art tuner are connected to voltage device to charge received signal and generate appropriate voltage drive or current drive to recognize the information embedded in the signal).

Regarding Claim 19, Empedocles et al. teaches another apparatus excluding the display device electrically connected to the charging unit, the other apparatus driven by the power charged in the charging unit (page 35, paragraphs 388-392 Empedocles teaches the other apparatus is sound device and antenna receiving sound signal has inductor and capacitor as a tuner. It is well known in the art tuner are connected to voltage device to charge received signal and generate appropriate voltage drive or current drive to recognize the information embedded in the signal).

Regarding Claim 23, Empedocles et al. teaches a display device (page 6, paragraph 115), comprising: at least one substrate provided with a display unit (page 7, paragraph 120) and display-unit-driving wiring lines (page 7, paragraph 120); the display device displaying at least one of the information written in a radio communication device other than the corresponding

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display device and the information read from the radio communication device other than the corresponding display device (page 27, Paragraphs 298-302, pages 29, 30, paragraph 330).

Regarding Claim 27, Empedocles et al. teaches the radio communication device other than the corresponding display device reading information concerning the corresponding electronic apparatus from the radio communication device and writing information concerning the corresponding electronic apparatus in the radio communication device as data (page 27, paragraphs 298-303).

Regarding Claim 28, Empedocles et al. teaches the radio communication device driven by radio waves input to the antenna from the outside (page 27, paragraphs 298-303).

Regarding Claim 29, Empedocles et al. teaches a power source unit electrically connected to the radio communication device, the radio communication device being driven by the power of the power source unit (page 26, paragraphs 279-288).

Regarding Claim 30, Empedocles et al. teaches the information concerning the corresponding electronic apparatus being rewritten in the radio communication device as data (page 26, paragraphs 279-288, page 27, paragraphs 292-297).

Regarding Claim 31, Empedocles et al. teaches the radio communication device includes a writing unit to write information concerning the corresponding electronic apparatus as data,



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and a rewritable region and a non-rewritable region are provided in the writing unit (page 26, paragraphs 279-288, page 27, paragraphs 292-297, page 27, paragraphs 298-304).

6. Claims 13-15, 20-22 and 24-26 rejected under 35 U.S.C. 103(a) as being unpatentable over Empedocles et al. (2005/0199731 A1) in view of Gauthier et al. (US 20010003445 A1) as applied to claims 1, 4-6, 11, 12, 16-19, 23 and 27-31 are above, and further in view of Jacobsen et al. (US 6,863,219 B1).

Regarding Claim 9, 10, 13-15, 20-22 and 24-26 Empedocles et al. fails to recite or disclose at least a part of the antenna formed on the substrate in a region excluding the display unit and an electronic apparatus, comprising: a first display device and a second display device, the second display device being the display device according to claim 1 and provided on the surface opposite to the surface on which the first display device is provided;

However, Jacobson et al. teaches an external substrate for driving the display unit electrically connected to the substrate and a conductor provided on the external substrate electrically connected to the antenna formed on the substrate so that the conductor on the external substrate and the antenna on the substrate include an entire antenna, and the communication integrated-circuit unit is mounted on the external substrate (Col. 4, Lines 35-47, Col. 6, Line 65 to Col. 7, Line 9, Col. 7, Line 35 to Col. 8, Line 12); the external substrate including of a plurality of external substrates, and the communication integrated-circuit unit is mounted on one of the plurality of external substrates (Col. 4, Lines 35-47, Col. 6, Line 65 to Col. 7, Line 9, Col. 7, Line 35 to Col. 8, Line 12). Jacobson et al. teaches at least a part of the

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antenna formed on the substrate in a region excluding the display unit (Col. 4, Lines 35-47, Col. 6, Line 65 to Col. 7, Line 9, Col. 7, Line 35 to Col. 8, Line 12); the conductor formed above the antenna on the substrate to include the corresponding display device does not overlap the antenna in plan view (Col. 4, Lines 35-47, Col. 6, Line 65 to Col. 7, Line 9, Col. 7, Line 35 to Col. 8, Line 12). at least a part of the antenna formed along one peripheral edge of the substrate (see figure 11 Col. 7, Lines 35-50 It is obvious to avoid the high frequency noise the antenna receiver and transmitters are kept away from display drivers specifically in a corner); Jacobson et al. teaches an electronic apparatus, comprising: a first display device and a second display device, the second display device being the display device according to claim 1 and provided on the surface opposite to the surface on which the first display device is provided (Col. 8, Lines 13-25); the first display device displaying at least one of information written in a radio communication device other than the corresponding display device by the second display device and information read from the radio communication device other than the corresponding display device by the second display device (Col. 8, Lines 13-25); the first display device storing and displaying at least one of information written in a radio communication device other than the corresponding display device by the second display device and information read from the radio communication device other than the corresponding display device by the second display device (Col. 8, Lines 13-25, Col. 7, Lines 29-31); the display device storing and displaying at least one of information written in a radio communication device other than the corresponding display device and information read from the radio communication device other than the corresponding display device (Col. 8, Lines 13-25, Col. 7, Lines 29-31); at least a part of one surface and the other surface of the display device exposed to the outside (Col. 5, Line 65 to Col. 6, Line 2, Col.

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8, Lines 13-27, see figure 6e) and the display device being a display device capable of displaying images on any of the one surface and the other surface of the display device (Col. 5, Line 65 to Col. 6, Line 2, Col. 8, Lines 13-27).

The reason to combine is Jacobson et al. teaches micro electronic assembly such as smart card include integrated circuits with antenna and dual displays and the antenna formed on the substrate in a region excluding the display unit (Col. 1, Lines 8-15, Col. 6, Line 65 to Col. 7, Line 9, Col. 8, Line 13-27).

Thus it is obvious to one in the ordinary skill in the art at the time of invention was made to incorporate teaching of Jacobson et al. in teaching of Empedocles et al. modified by Gauthier et al. to be able to have dual display unit smart card with built in antennas and interconnect wiring power and ground leads on one of the substrate.

### ***Response to Arguments***

7. Applicant's arguments, see remark, filed 02-07-2007, with respect to the rejection(s) of claim(s) 1 regarding Empedocles et al. RFID tag drawing fails to illustrate the display very specifically under 35 U.S.C. 102(e) have been fully considered and are persuasive. However, upon further consideration, a new ground(s) of rejection is made in view of Gauthier et al. (US 20010003445 A1).

Applicant argues Empedocles et al. fails to disclose what material the antenna is formed of, as well as whether the components are formed using the same process.

Examiner disagrees as Empedocles et al. does what material the antenna is formed of, as well as whether the components are formed using the same process (see page 7, paragraph 120,

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page 14, paragraph 186, pages 16,17 paragraph 205, and page 26, paragraphs 279,280,286 describes forming and electrical connections of antenna for Nano technology devices for specifically RFID tag). It is also well known in the art the antenna are printed with same conductor material on the same substrate for an non-contact type IC card. (see Shibata et al. (6,343,744) Col. 4, Lines 56-67).

### *Conclusion*

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Shibata et al. (6,343,744) Noncontact type IC card and system therefor.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Prabodh M. Dharia whose telephone number is 571-272-7668.

The examiner can normally be reached on M-F 8AM to 5PM.

10. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

11. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR

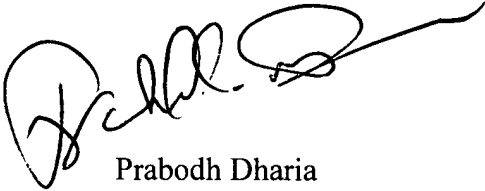
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system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

A handwritten signature in black ink, appearing to read 'Prabodh Dharia', with a stylized, cursive script.

Prabodh Dharia

Partial Signatory Program Authority

AU2629

March 20, 2007